Application Serial No. 10/806,894 Attorney Docket No. HES 2001-IP-005267U1P2



## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

## **Listing of Claims:**

1. (Currently Amended) A method of reducing the permeability of a subterranean formation to aqueous-based fluids during the drilling phase comprising the steps of:

providing a water-soluble relative permeability modifier that comprises a hydrophobically modified polymer, wherein the hydrophobically modified polymer comprises a polymer backbone that comprises polar heteroatoms,

placing the water-soluble relative permeability modifier into the subterranean formation during the drilling phase, and

allowing the water-soluble relative permeability modifier to adsorb onto a surface within interact with at least a portion of the subterranean formation thereby reducing the permeability of at least a portion of that portion of the subterranean formation to aqueous based fluids.

- 2. (Original) The method of claim 1 wherein the hydrophobically modified polymer has a molecular weight in the range of from about 100,000 to about 10,000,000.
- 3. (Previously Presented) The method of claim 1 wherein the polar heteroatoms are selected from the group consisting of oxygen, nitrogen, sulfur, and phosphorous.
- 4. (Original) The method of claim 1 wherein the hydrophobically modified polymer is a reaction product of a hydrophobic compound and a hydrophilic polymer that comprises a polymer backbone comprising polar heteroatoms.
- 5. (Previously Presented) The method of claim 4 wherein the hydrophilic polymer is selected from the group consisting of a cellulose, a chitosan, a polyamide, a polyetheramine, a polyethyleneimine, a polyhydroxyetheramine, a polylysine, a polysulfone, and a starch.
- 6. (Previously Presented) The method of claim 4 wherein the hydrophobic compound is selected from the group consisting of an alkyl halide, a sulfonate, a sulfate, and an organic acid derivative.
- 7. (Withdrawn) The method of claim 6 wherein the organic acid derivative comprises an octenyl succinic acid; a dodecenyl succinic acid; or an anhydride, ester, or amide of octenyl succinic acid or dodecenyl succinic acid.